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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,723	08/09/2001	Hironori Mizuguchi	Q65824	3958

7590 07/21/2008

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EXAMINER	
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ART UNIT	PAPER NUMBER
2618	

MAIL DATE	DELIVERY MODE
07/21/2008	PAPER

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09924723
Filing Date: August 9, 2001
Appellant(s): MIZUGUCHI

MIZUGUCHI
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6/9/2008 appealing from the Office action mailed 10/5/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments after Final

The statement of the status of amendments after final contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The "grounds of rejection to be reviewed on appeal" contained in the brief is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,603,746	Larijani et al.	6-18-1999
6,418,321	Itoh et al.	6-5-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-42 are rejected under 35 U.S.C. 103(a) as being anticipated over Larijani (Larijani et al., U. S. Patent 6,603,746) in view of Itoh (Itoh et al., U. S. Patent 6,418,321).

Regarding claim 1, Larijani discloses a base station of a mobile communication system *(e.g., Fig. 1, 1:7-11, 4:44-46, 66-67, 5:1, the base station (Fig. 1) of the mobile communication system),* comprising: a communication monitor circuit for detecting quality *[deterioration]* of radio communication with mobile stations *(e.g., Fig. 1, 6:54-65, 7:1-15, 36-42, 8:58-65, the control processor (52), Maximum Selector (64),*

Integrator (60), and Statistical Power control (54) (Communication Monitor components (Circuits)) detecting (monitoring), evaluating, and deciding (adjusting) the radio communication quality with the mobile units (stations)), wherein: said communication monitor circuit comprises: a monitor unit for monitoring a communication state of said radio communication *(e.g., Fig. 1, 5:1-20, 6:54-65, 7:1-15, 36-42, 8:58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) including the detecting unit (e.g. Selector (64)) for detecting (monitoring) communication quality (state) of mobile communication)*, a adjusting unit coupled to said monitor unit for judging whether said communication state monitored by said monitor unit is worse than a predetermined state *(e.g., Fig. 1, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, Statistical Power Control (54) (adjusting unit) connected to the detecting (monitoring) unit (e.g. Selector (64)) to evaluate (judge) the communication detecting (monitoring) unit by measuring according to target value (predetermined) for the unfavorable (worse) and favorable quality)*, and a notifying unit coupled to said adjusting circuit for notifying an external circuit of said quality *[deterioration]* when said adjusting circuit judges that said communication state is worse than said predetermined state *(e.g., Fig. 1, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) that includes the evaluating unit (e.g. Selector (64)) connected to the control processor (52) (notifying unit) to external components for transmission (notifying) unfavorable (worse) and favorable quality), and the processor notifying Statistical Power Control (adjusting unit) of quality that is being greater or less than the predetermine values*

(worse than the predetermined value)).

Larijani does not specifically teach the deterioration, however, Larijani teaches the detecting and measuring the interference *(e.g., Fig. 1, 9:9-65, 10:58-67, 11:29-44, the power controller detects the quality of signal by measuring the interference).*

In a related art dealing with mobile communications transmission power control *(e.g., Fig. 1, 5, 7, 9),* Itoh teaches the quality deterioration *(e.g., 1:6-11, 16-26, 31-39, 2:28-36, 4:48-67, the detection of quality degradation (deterioration)).*

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Itoh's power control CDMA mobile communication system transmission quality degradation detection into Larijani's power control CDMA mobile communication system transmission quality detection to provide the power control CDMA mobile communication system with minimized interference and improved quality of transmission signals between the base and mobile stations *(Itoh, 1:6-11, 19-26).*

Regarding claim 6, Larijani discloses a base station of a mobile communication system *(e.g., Fig. 1, 1:7-11, 4:44-46, 66-67, 5:1, the base station (Fig. 1) of the mobile communication system)* comprising: receivers for demodulating transmission signals transmitted from said mobile stations to produce demodulated signals *(e.g., Fig. 1, 1:7-11, 35-67, 5:1-20, the CDMA multi-path receiver (12) demodulates the received signals that are transmitted from the mobile units)*, signal-to-noise ratio determining circuits coupled to said receivers respectively for determining signal-to-noise ratios of said demodulated signals *(e.g., Fig. 1, 4:66-67, 5:1-17, 29-32, 41-44, 6:66-67, 7:1-2, the*

antenna (10) receiver/collators (18A-18N) are connected to signal-to-interferences (Signal-to-Noise) sub-M circuits to configure the signal-to-interference ratios (signal-to-noise rations) of the modulated signals), transmission power control bit generators coupled to said signal-to-noise ratio determining circuits respectively for generating said transmission power control bit signals based on signal-to-noise ratios *(e.g., Fig. 1, 6:54-67, 7:1-2, 8:15-29, the Statistical Power control (54) that generate power control bit based on signal-to-interference ration (signal-to-noise ratio) connected to the signal-to-interference ratio (signal-to-noise ratio) configuration circuit (64, 60, 58))*; a communication state monitor circuit coupled to said receivers for detecting quality *[deterioration]* of a communication state of radio communication between said base station and said mobile stations *(e.g., Fig. 1, 6:54-65, 7:1-15, 36-42, 8:58-65, the CDMA multi-path receiver (12) connected to the control processor (52), Maximum Selector (64), Integrator (60), and Statistical Power control (54) (Communication Monitor components (Circuits)) detecting (monitoring), evaluating, and deciding (adjusting) the radio communication quality with the mobile units (stations))* ; and a transmission power bit adjusting circuit coupled to said communication state monitor circuit *(e.g., Fig. 1, 6:54-67, 7:1-15, 8:15-26, 9:9-27, the Statistical Power control (54) that generate power control bit it is an adjusting circuit that is connected to the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) including the detecting unit (e.g. Selector (64)) for detecting (monitoring) communication quality (state) of mobile communication)* and said transmission power control bit generators for controlling said transmission power control bit signals so as to suppress an

increase of transmission power of said mobile stations when said communication state monitor circuit detects said quality *[deterioration] (e.g., Fig. 1, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) that includes the evaluating unit (e.g. Selector (64)) connected to the control processor (52) (notifying unit) to external components for transmission (notifying) unfavorable and favorable quality), and the processor notifying Statistical Power Control (adjusting unit) of quality that is being greater or less than the predetermine values for eliminating excess power transmission).*

Larijani does not specifically teach the deterioration, however, Larijani teaches the detecting and measuring the interference *(e.g., Fig. 1, 9:9-65, 10:58-67, 11:29-44, the power controller detects the quality of signal by measuring the interference).*

In a related art dealing with mobile communications transmission power control *(e.g., Fig. 1, 5, 7, 9),* Itoh teaches the quality deterioration *(e.g., 1:6-11, 16-26, 31-39, 2:28-36, 4:48-67, the detection of quality degradation (deterioration)).*

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Itoh's power control CDMA mobile communication system transmission quality degradation detection into Larijani's power control CDMA mobile communication system transmission quality detection to provide the power control CDMA mobile communication system with minimized interference and improved quality of transmission signals between the base and mobile stations *(Itoh, 1:6-11, 19-26).*

Regarding claim 14, Larijani a transmission power control system for use in a base

station of a mobile communication system *(e.g., Fig. 1, 1:7-11, 4:44-46, 66-67, 5:1, the base station (Fig. 1) of the mobile communication system controls the mobile units power transmission)*, said base station including receivers for demodulating transmission signals transmitted from said mobile stations to produce demodulated signals *(e.g., Fig. 1, 1:7-11, 35-67, 5:1-20, the CDMA multi-path receiver (12) demodulates the received signals that are transmitted from the mobile units)*, signal-to-noise ratio determining circuits coupled to said receivers, respectively, for determining signal-to-noise ratios of said demodulated signals *(e.g., Fig. 1, 4:66-67, 5:1-17, 29-32, 41-44, 6:66-67, 7:1-2, the antenna (10) receiver/collators (18A-18N) are connected to signal-to-interferences (Signal-to-Noise) sub-M circuits to configure the signal-to-interference ratios (signal-to-noise rations) of the modulated signals)* and transmission power control bit generators connected to said signal-to-noise ratio determining circuits respectively for generating said transmission power control bit signals based on said signal-to-noise ratios *(e.g., Fig. 1, 6:54-67, 7:1-2, 8:15-29, the Statistical Power control (54) that generate power control bit based on signal-to-interference ration (signal-to-noise ratio) connected to the signal-to-interference ratio (signal-to-noise ratio) configuration circuit (64, 60, 58))*, said transmission power control system comprising: a communication state monitor circuit coupled to said receivers for detecting quality *[deterioration]* of a communication state of radio communication between said base station and said mobile stations*(e.g., Fig. 1, 6:54-65, 7:1-15, 36-42, 8:58-65, the CDMA multi-path receiver (12) connected to the control processor (52), Maximum Selector (64), Integrator (60), and Statistical Power control (54) (Communication Monitor components (Circuits)) detecting (monitoring),*

evaluating, and deciding (adjusting) the radio communication quality with the mobile units (stations)); and a transmission power bit adjusting circuit coupled to said communication state monitor circuit *(e.g., Fig. 1, 6:54-67, 7:1-15, 8:15-26, 9:9-27, the Statistical Power control (54) that generate power control bit it is an adjusting circuit that is connected to the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) including the detecting unit (e.g. Selector (64)) for detecting (monitoring) communication quality (state) of mobile communication)* and said transmission power control bit generators for controlling said transmission power control bit signals so as to suppress an increase of transmission power of said mobile stations when said communication state monitor circuit detects said quality *[deterioration] (e.g., Fig. 1, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) that includes the evaluating unit (e.g. Selector (64)) connected to the control processor (52) (notifying unit) to external components for transmission (notifying) unfavorable and favorable quality), and the processor notifying Statistical Power Control (adjusting unit) of quality that is being greater or less than the predetermine values for eliminating excess power transmission).*

Larijani does not specifically teach the deterioration, however, Larijani teaches the detecting and measuring the interference *(e.g., Fig. 1, 9:9-65, 10:58-67, 11:29-44, the power controller detects the quality of signal by measuring the interference).*

In a related art dealing with mobile communications transmission power control *(e.g., Fig. 1, 5, 7, 9),* Itoh teaches the quality deterioration *(e.g., 1:6-11, 16-26, 31-39, 2:28-36,*

4:48-67, the detection of quality degradation (deterioration)).

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Itoh's power control CDMA mobile communication system transmission quality degradation detection into Larijani's power control CDMA mobile communication system transmission quality detection to provide the power control CDMA mobile communication system with minimized interference and improved quality of transmission signals between the base and mobile stations *(Itoh, 1:6-11, 19-26).*

Regarding claim 22, Larijani discloses a method of controlling transmission power of mobile stations from a base station of a mobile communication system *(e.g., Fig. 1, 1:7-11, 4:44-46, 66-67, 5:1, the base station (Fig. 1) of the mobile communication system controls the mobile units power transmission)*, comprising: monitoring, at said base station *(e.g., Fig. 1, 6:54-65, 7:1-15, 36-42, 8:58-65, the control processor (52), Maximum Selector (64), Integrator (60), and Statistical Power control (54) (Communication Monitor components (Circuits)) detecting (monitoring))*, a communication state of radio communication between said base station and said mobile stations *(e.g., Fig. 1, 6:54-65, 7:1-15, 36-42, 8:58-65, the control processor (52), Maximum Selector (64), Integrator (60), and Statistical Power control (54) (Communication Monitor components (Circuits)) detecting (monitoring), evaluating, and deciding (adjusting) the radio communication quality with the mobile units (stations))*; judging, at said base station, whether said monitored communication state is worse than a predetermined state *(e.g., Fig. 1, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, Statistical*

Power Control (54) (adjusting unit) connected to the detecting (monitoring) unit (e.g. Selector (64)) to evaluate (judge) the communication detecting (monitoring) unit by measuring according to target value (predetermined) for the unfavorable (worse) and favorable quality); and notifying, in said base station, an external circuit of said quality *[deterioration]* when said communication state is judged to be worse than said predetermined state *(e.g., Fig. 1, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) that includes the evaluating unit (e.g. Selector (64)) connected to the control processor (52) (notifying unit) to external components for transmission (notifying) unfavorable (worse) and favorable quality), and the processor notifying Statistical Power Control (adjusting unit) of quality that is being greater or less than the predetermine values (worse than the predetermined value)).*

Larijani does not specifically teach the deterioration, however, Larijani teaches the detecting and measuring the interference *(e.g., Fig. 1, 9:9-65, 10:58-67, 11:29-44, the power controller detects the quality of signal by measuring the interference).*

In a related art dealing with mobile communications transmission power control *(e.g., Fig. 1, 5, 7, 9),* Itoh teaches the quality deterioration *(e.g., 1:6-11, 16-26, 31-39, 2:28-36, 4:48-67, the detection of quality degradation (deterioration)).*

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Itoh's power control CDMA mobile communication system transmission quality degradation detection into Larijani's power control CDMA mobile communication system transmission quality detection to provide the power control

CDMA mobile communication system with minimized interference and improved quality of transmission signals between the base and mobile stations *(Itoh, 1:6-11, 19-26).*

Regarding claim 27, Larijani a method of controlling transmission power of mobile stations of a mobile communication system by use of transmission power control bit signals transmitted from a base station *(e.g., Fig. 1, 1:7-11, 4:44-46, 66-67, 5:1, the base station (Fig. 1) of the mobile communication system controls the mobile units power transmission)*, comprising; demodulating transmission signals transmitted from said mobile stations to produce demodulated signals *(e.g., Fig. 1, 1:7-11, 35-67, 5:1-20, the CDMA multi-path receiver (12) demodulates the received signals that are transmitted from the mobile units)*; determining signal-to-noise ratios of said demodulated signals *(e.g., Fig. 1, 4:66-67, 5:1-17, 29-32, 41-44, 6:66-67, 7:1-2, the antenna (10) receiver/collators (18A-18N) are connected to signal-to-interferences (Signal-to-Noise) sub-M circuits to configure the signal-to-interference ratios (signal-to-noise rations) of the modulated signals)*; generating said transmission power control bit signals on the basis of said signal-to-noise ratios *(e.g., Fig. 1, 6:54-67, 7:1-2, 8:15-29, the Statistical Power control (54) that generate power control bit based on signal-to-interference ration (signal-to-noise ratio) connected to the signal-to-interference ratio (signal-to-noise ratio) configuration circuit (64, 60, 58))*; detecting, at said base station, quality *[deterioration]* of a communication state of radio communication between said base station and said mobile stations *(e.g., Fig. 1, 6:54-65, 7:1-15, 36-42, 8:58-65, the CDMA multi-path receiver (12) connected to the control processor (52), Maximum Selector (64), Integrator*

(60), and Statistical Power control (54) (Communication Monitor components (Circuits)) detecting (monitoring), evaluating, and deciding (adjusting) the radio communication quality with the mobile units (stations)); and controlling, at said based station, said transmission power control bit signals so as to suppress an increase of transmission power of said mobile stations when said quality *[deterioration]* is detected *(e.g., Fig. 1, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) that includes the evaluating unit (e.g. Selector (64)) connected to the control processor (52) (notifying unit) to external components for transmission (notifying) unfavorable and favorable quality), and the processor notifying Statistical Power Control (adjusting unit) of quality that is being greater or less than the predetermine values for eliminating excess power transmission).*

Larijani does not specifically teach the deterioration, however, Larijani teaches the detecting and measuring the interference *(e.g., Fig. 1, 9:9-65, 10:58-67, 11:29-44, the power controller detects the quality of signal by measuring the interference).*

In a related art dealing with mobile communications transmission power control *(e.g., Fig. 1, 5, 7, 9),* Itoh teaches the quality deterioration *(e.g., 1:6-11, 16-26, 31-39, 2:28-36, 4:48-67, the detection of quality degradation (deterioration)).*

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Itoh's power control CDMA mobile communication system transmission quality degradation detection into Larijani's power control CDMA mobile communication system transmission quality detection to provide the power control

CDMA mobile communication system with minimized interference and improved quality of transmission signals between the base and mobile stations *(Itoh, 1:6-11, 19-26).*

Regarding claim 35, Larijani discloses a base station in a mobile communication system *(e.g., Fig. 1, 1:7-11, 4:44-46, 66-67, 5:1, the base station (Fig. 1) of the mobile communication system)* comprising: .a receiver which demodulates transmission signals transmitted from plural mobile stations *(e.g., Fig. 1, 1:7-11, 35-67, 5:1-20, the CDMA multi-path receiver (12) demodulates the received signals that are transmitted from the mobile units)*, a communication state monitor, coupled to said receiver, which detects a *[deterioration]* of a communication state of radio communication between said base station and the plural mobile stations *(e.g., Fig. 1, 6:54-65, 7:1-15, 36-42, 8:58-65, the CDMA multi-path receiver (12) connected to the control processor (52), Maximum Selector (64), Integrator (60), and Statistical Power control (54) (Communication Monitor components (Circuits)) detecting (monitoring), evaluating, and deciding (adjusting) the radio communication quality with the mobile units (stations))*; a transmission power control signal adjusting circuit, coupled to said communication state monitor *(e.g., Fig. 1, 6:54-67, 7:1-15, 8:15-26, 9:9-27, the Statistical Power control (54) that generate power control bit it is an adjusting circuit that is connected to the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) including the detecting unit (e.g. Selector (64)) for detecting (monitoring) communication quality (state) of mobile communication)*, which controls transmission power control signals so as to decrease the transmission power of the plural

mobile stations if said communication sate monitor detects the *[deterioration] (e.g., Fig. 1, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) that includes the evaluating unit (e.g. Selector (64)) connected to the control processor (52) (notifying unit) to external components for transmission (notifying) unfavorable and favorable quality), and the processor notifying Statistical Power Control (adjusting unit) of quality that is being greater or less than the predetermine values for eliminating excess power transmission)*; and a transmitter *(e.g., Fig 1, transmitter (84))*, coupled to said transmission power control signal adjusting circuit, which transmits the transmission power control signal to the plural mobile stations *(e.g., Fig. 1, 1:7-11, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) includes the evaluating unit (e.g. Selector (64)) connected to the control processor (52) (notifying unit) and to the transmitter (84) for to transmit the power control signal to multiple mobile units).*

Larijani does not specifically teach the deterioration, however, Larijani teaches the detecting and measuring the interference *(e.g., Fig. 1, 9:9-65, 10:58-67, 11:29-44, the power controller detects the quality of signal by measuring the interference).*

In a related art dealing with mobile communications transmission power control *(e.g., Fig. 1, 5, 7, 9),* Itoh teaches the quality deterioration *(e.g., 1:6-11, 16-26, 31-39, 2:28-36, 4:48-67, the detection of quality degradation (deterioration)).*

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Itoh's power control CDMA mobile communication system

transmission quality degradation detection into Larijani's power control CDMA mobile communication system transmission quality detection to provide the power control CDMA mobile communication system with minimized interference and improved quality of transmission signals between the base and mobile stations *(Itoh, 1:6-11, 19-26).*

Regarding claim 37, Larijani discloses a mobile station among plural mobile stations *(e.g., Fig. 1-3, 1:7-11, 63-67, 2:53-57, 11:29-44, the mobile unit out of multiple mobile units in a CDMA communication system)*, in a mobile communication system, comprising; a transmitter which transmits a signal to a base station *(e.g., Fig. 1-3, 1:7-11, 63-67, 2:53-57, 11:29-44, the mobile transmitter transmits signal to a base station via reverse-link)*; a receiver which receives, from the base station *(e.g., Fig. 1-3, 1:7-11, 62-67, 4:57-62, 10:1-12, the mobile unit(s) receiver receives transmission power control from the base station)*, a transmission power control signal directing to decrease a power of the signal to be transmitted to the base station in the case where a *[deterioration]* of a communication sate of radio communication between the base station and the plural mobile stations is detected at the base station *(e.g., Fig. 1, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) that includes the evaluating unit (e.g. Selector (64)) connected to the control processor (52) (notifying unit) to external components for transmission (notifying) unfavorable and favorable quality), and the processor notifying Statistical Power Control (adjusting unit) of quality that is being greater or less than the predetermine values for eliminating excess power transmission*

that is controlled at the base station and multiple mobile units); and a transmission power controller which decides a transmission power of the signal to be transmitted to the base station based on the transmission power control signal *(e.g., Fig. 1, 6:54-67, 7:1-2, 8:15-29, 11:29-44, the transmission power control circuit configured to transmit signals to base station according to power control signal).*

Larijani does not specifically teach the deterioration, however, Larijani teaches the detecting and measuring the interference *(e.g., Fig. 1, 9:9-65, 10:58-67, 11:29-44, the power controller detects the quality of signal by measuring the interference).*

In a related art dealing with mobile communications transmission power control *(e.g., Fig. 1, 5, 7, 9),* Itoh teaches the quality deterioration *(e.g., 1:6-11, 16-26, 31-39, 2:28-36, 4:48-67, the detection of quality degradation (deterioration)).*

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Itoh's power control CDMA mobile communication system transmission quality degradation detection into Larijani's power control CDMA mobile communication system transmission quality detection to provide the power control CDMA mobile communication system with minimized interference and improved quality of transmission signals between the base and mobile stations *(Itoh, 1:6-11, 19-26).*

Regarding claim 39, Larijani discloses a mobile communication system comprising a base station and plural mobile stations *(e.g., Fig. 1, 1:7-11, 35-67, 5:1-20, the CDMA system including a base station communicating with multi mobile units (stations))*, wherein said base station comprises: a receiver which demodulates transmission signals

transmitted from said plural mobile stations *(e.g., Fig. 1, 1:7-11, 35-67, 5:1-20, the CDMA multi-path receiver (12) demodulates the received signals that are transmitted from the mobile units)*, a communication state monitor, coupled to said receiver, which detects a *[deterioration]* of a communication state of radio communication between said base station and said plural mobile stations *(e.g., Fig. 1, 6:54-65, 7:1-15, 36-42, 8:58-65, the CDMA multi-path receiver (12) connected to the control processor (52), Maximum Selector (64), Integrator (60), and Statistical Power control (54) (Communication Monitor components (Circuits)) detecting (monitoring), evaluating, and deciding (adjusting) the radio communication quality with the mobile units (stations))*, a transmission power control signal adjusting circuit, coupled to said communication state monitor *(e.g., Fig. 1, 6:54-67, 7:1-15, 8:15-26, 9:9-27, the Statistical Power control (54) that generate power control bit it is an adjusting circuit that is connected to the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) including the detecting unit (e.g. Selector (64)) for detecting (monitoring) communication quality (state) of mobile communication))*, which controls transmission power control signals so us to decrease the transmission power of said plural mobile stations if said communication sate monitor detects the *[deterioration] (e.g., Fig. 1, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) that includes the evaluating unit (e.g. Selector (64)) connected to the control processor (52) (notifying unit) to external components for transmission (notifying) unfavorable and favorable quality), and the processor notifying Statistical Power Control (adjusting unit) of quality*

that is being greater or less than the predetermine values for eliminating excess power transmission); and a transmitter *(e.g., Fig 1, transmitter (84))*, coupled to said transmission power control signal adjusting circuit, which transmits the transmission power control signals to the plural mobile stations *(e.g., Fig. 1, 1:7-11, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) includes the evaluating unit (e.g. Selector (64)) connected to the control processor (52) (notifying unit) and to the transmitter (84) for to transmit the power control signal to multiple mobile units)*, and each of said mobile stations comprises: a transmitter which transmits a signal to said base station *(e.g., Fig. 1-3, 1:7-11, 63-67, 2:53-57, 11:29-44, the mobile transmitter transmits signal to a base station via reverse-link)* a receiver which receives one of the transmission power control signals from the base station *(e.g., Fig. 1-3, 1:7-11, 62-67, 4:57-62, 11:29-44, the mobile unit(s) receiver receives transmission power control from the base station)*; and a transmission power controller which decides a transmission power of the signal to be transmitted to said base station based on the transmission power control signal received by said receiver *(e.g., Fig. 1-3, 1:7-11, 62-67, 4:57-62, 11:29-44, the mobile unit(s) controller configures and transmits signals to the based station according to received power control signal from the base station).*

Larijani does not specifically teach the deterioration, however, Larijani teaches the detecting and measuring the interference *(e.g., Fig. 1, 9:9-65, 10:58-67, 11:29-44, the power controller detects the quality of signal by measuring the interference).*

In a related art dealing with mobile communications transmission power control *(e.g.,*

Fig. 1, 5, 7, 9), Itoh teaches the quality deterioration *(e.g., 1:6-11, 16-26, 31-39, 2:28-36, 4:48-67, the detection of quality degradation (deterioration)).*

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Itoh's power control CDMA mobile communication system transmission quality degradation detection into Larijani's power control CDMA mobile communication system transmission quality detection to provide the power control CDMA mobile communication system with minimized interference and improved quality of transmission signals between the base and mobile stations *(Itoh, 1:6-11, 19-26).*

Regarding claim 40, Larijani discloses a method, for a mobile communication system comprising a base station and plural mobile stations *(e.g., Fig. 1, 1:7-11, 35-67, 5:1-20, the CDMA system including a base station communicating with multi mobile units (stations))*, comprising: demodulating transmission signals transmitted from the plural mobile stations *(e.g., Fig. 1, 1:7-11, 35-67, 5:1-20, the CDMA multi-path receiver (12) demodulates the received signals that are transmitted from the mobile units)*; detecting, at the base station, a *[deterioration]* of a communication state of radio communication between said base station and the plural mobile stations *(e.g., Fig. 1, 6:54-65, 7:1-15, 36-42, 8:58-65, the CDMA multi-path receiver (12) connected to the control processor (52), Maximum Selector (64), Integrator (60), and Statistical Power control (54) (Communication Monitor components (Circuits)) detecting (monitoring), evaluating, and deciding (adjusting) the radio communication quality with the mobile units (stations))*; controlling, at the base station, power control signals so as to decrease the transmission

power of the plural mobile stations if said communication sate monitor detects the *[deterioration] (e.g., Fig. 1, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) that includes the evaluating unit (e.g. Selector (64)) connected to the control processor (52) (notifying unit) to external components for transmission (notifying) unfavorable and favorable quality), and the processor notifying Statistical Power Control (adjusting unit) of quality that is being greater or less than the predetermine values for eliminating excess power transmission)*; and transmitting *(e.g., Fig 1, transmitter (84))* the transmission power control signals to the plural mobile stations *(e.g., Fig. 1, 1:7-11, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) includes the evaluating unit (e.g. Selector (64)) connected to the control processor (52) (notifying unit) and to the transmitter (84) for to transmit the power control signal to multiple mobile units).*

Larijani does not specifically teach the deterioration, however, Larijani teaches the detecting and measuring the interference *(e.g., Fig. 1, 9:9-65, 10:58-67, 11:29-44, the power controller detects the quality of signal by measuring the interference).*

In a related art dealing with mobile communications transmission power control *(e.g., Fig. 1, 5, 7, 9),* Itoh teaches the quality deterioration *(e.g., 1:6-11, 16-26, 31-39, 2:28-36, 4:48-67, the detection of quality degradation (deterioration)).*

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Itoh's power control CDMA mobile communication system

transmission quality degradation detection into Larijani's power control CDMA mobile communication system transmission quality detection to provide the power control CDMA mobile communication system with minimized interference and improved quality of transmission signals between the base and mobile stations *(Itoh, 1:6-11, 19-26).*

Regarding claim 41, Larijani discloses a method, for a mobile communication system comprising a base station and plural mobile stations *(e.g., Fig. 1, 1:7-11, 35-67, 5:1-20, the CDMA system including a base station communicating with multi mobile units (stations))*, comprising: transmitting a signal to the base station *(e.g., Fig. 1-3, 1:7-11, 63-67, 2:53-57, 11:29-44, the mobile transmitter transmits signal to a base station via reverse-link)*, receiving, from the base station *(e.g., Fig. 1-3, 1:7-11, 62-67, 4:57-62, 11:29-44, the mobile unit(s) receiver receives transmission power control from the base station)*, a transmission power control signal directing to decrease a power of the signal to be transmitted to the base station in the case where a *[deterioration]* of a communication state of radio communication between the base station and the plural mobile stations is detected at the base station *(e.g., Fig. 1, 6:54-65, 5:41-44, 7:1-15, 8:15-26, 58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) that includes the evaluating unit (e.g. Selector (64)) connected to the control processor (52) (notifying unit) to external components for transmission (notifying) unfavorable and favorable quality), and the processor notifying Statistical Power Control (adjusting unit) of quality that is being greater or less than the predetermine values for eliminating excess power transmission that is controlled at the*

base station and the multiple mobile units based on the power control signal received from base); and deciding a transmission power of the signal to be transmitted to the base station based on the transmission power control signal *(e.g., Fig. 1-3, 1:7-11, 62-67, 4:57-62, 11:29-44, the mobile unit(s) controller configures and transmits signals to the based station according to received power control signal from the base station).*

Larijani does not specifically teach the deterioration, however, Larijani teaches the detecting and measuring the interference *(e.g., Fig. 1, 9:9-65, 10:58-67, 11:29-44, the power controller detects the quality of signal by measuring the interference).*

In a related art dealing with mobile communications transmission power control *(e.g., Fig. 1, 5, 7, 9),* Itoh teaches the quality deterioration *(e.g., 1:6-11, 16-26, 31-39, 2:28-36, 4:48-67, the detection of quality degradation (deterioration)).*

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Itoh's power control CDMA mobile communication system transmission quality degradation detection into Larijani's power control CDMA mobile communication system transmission quality detection to provide the power control CDMA mobile communication system with minimized interference and improved quality of transmission signals between the base and mobile stations *(Itoh, 1:6-11, 19-26).*

Regarding claim 42, Larijani discloses a method for a mobile communication system, comprising a base station and plural mobile stations *(e.g., Fig. 1, 1:7-11, 35-67, 5:1-20, the CDMA system including a base station communicating with multi mobile units (stations))*, comprising; demodulating transmission signals transmitted from the plural

mobile stations; detecting, at the base station *(e.g., Fig. 1, 1:7-11, 35-67, 5:1-20, the CDMA multi-path receiver (12) demodulates the received signals that are transmitted from the mobile units)*, a *[deterioration]* of a communication state of radio communication between-said base station and the plural mobile stations *(e.g., Fig. 1, 6:54-65, 7:1-15, 36-42, 8:58-65, the CDMA multi-path receiver (12) connected to the control processor (52), Maximum Selector (64), Integrator (60), and Statistical Power control (54) (Communication Monitor components (Circuits)) detecting (monitoring), evaluating, and deciding (adjusting) the radio communication quality with the mobile units (stations))*; controlling, at the base station, transmission power control signals so us to decrease the transmission power of the plural mobile stations if said communication sate monitor detects the *[deterioration] (e.g., Fig. 1, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) that includes the evaluating unit (e.g. Selector (64)) connected to the control processor (52) (notifying unit) to external components for transmission (notifying) unfavorable and favorable quality), and the processor notifying Statistical Power Control (adjusting unit) of quality that is being greater or less than the predetermine values for eliminating excess power transmission)*; transmitting *(e.g., Fig 1, transmitter (84))* the transmission power control signals to the plural mobile stations *(e.g., Fig. 1, 1:7-11, 6:54-65, 7:1-15, 8:15-26, 58-65, 9:9-63, the control processor (52), Maximum Selector (64), Integrator (60) (Communication Monitor components (Circuits)) includes the evaluating unit (e.g. Selector (64)) connected to the control processor (52) (notifying unit) and to the transmitter (84) for to transmit the*

power control signal to multiple mobile units); transmitting a signal to the base station *(e.g., Fig. 1-3, 1:7-11, 63-67, 2:53-57, 11:29-44, the mobile transmitter transmits signal to a base station via reverse-link)*; receiving one of the transmission power control signals form the base station *(e.g., Fig. 1-3, 1:7-11, 62-67, 4:57-62, 11:29-44, the mobile unit(s) receiver receives transmission power control from the base station)*; and deciding a transmission power of the signal to be transmitted to the base station based on the transmission power control signal received *(e.g., Fig. 1-3, 1:7-11, 62-67, 4:57-62, 11:29-44, the mobile unit(s) controller configures and transmits signals to the based station according to received power control signal from the base station).*

Larijani does not specifically teach the deterioration, however, Larijani teaches the detecting and measuring the interference *(e.g., Fig. 1, 9:9-65, 10:58-67, 11:29-44, the power controller detects the quality of signal by measuring the interference).*

In a related art dealing with mobile communications transmission power control *(e.g., Fig. 1, 5, 7, 9),* Itoh teaches the quality deterioration *(e.g., 1:6-11, 16-26, 31-39, 2:28-36, 4:48-67, the detection of quality degradation (deterioration)).*

It would have been obvious to one of ordinary skill in the art at the time invention was made to have included Itoh's power control CDMA mobile communication system transmission quality degradation detection into Larijani's power control CDMA mobile communication system transmission quality detection to provide the power control CDMA mobile communication system with minimized interference and improved quality of transmission signals between the base and mobile stations *(Itoh, 1:6-11, 19-26).*

Regarding claims 2 and 18, Larijani in view of Itoh teach all the imitations in claims 1, 14, and further, Larijani teaches wherein: said monitor unit is coupled to said receivers for monitoring total interference electric power of said demodulated signals as said communication state *(e.g., 1:62-67, 2:1-7, 3:60-65, 4:27-37, 9:43-46)*, and said adjusting circuit judging that said communication state is worse than said predetermined state when said total interference electric power is equal to or larger than a predetermined threshold *(e.g., 1:7-23, 35-46, 62-67, 2:53-57, 3:13-33, 4:44-46, 57-67, 6:66-67, 7:1-17, 8:15-29, 9:9-67, 11:29-44)*.

Regarding claims 3, 11 and 19, Larijani in view of Itoh teach all the imitations in claims 1, 6, 14, and further, Larijani teaches wherein: said monitor unit coupled to said signal-to-noise ratio determining circuits monitors said signal-to-noise ratios as said communication state *(e.g., Fig. 1-3, 4:44-53, 66-67, 5:1-20, 29-33, 6:54-67, 7:1-17, 8:22-44, the control processor (52), Maximum Selector (64), Integrator (60), and the connection made to the CDMA multi-path receiver(s), detecting and evaluating the radio communication quality (Communication monitor) with the mobile stations)*, and said adjusting unit judges that said communication state is worse than said predetermined state when the number of signal-to-noise*(e.g., 1:7-23, 35-46, 62-67, 2:53-57, 3:13-33, 4:44-46, 57-67, 6:66-67, 7:1-17, 8:15-29, 9:9-67, 11:29-44)*, ratios each of which is smaller than a predetermined value, is equal to or larger than a predetermined threshold *(e.g., 1:7-23, 35-46, 62-67, 2:53-57, 3:13-33, 4:44-46, 57-67, 6:66-67, 7:1-17, 8:15-29, 9:9-67, 11:29-44)*.

Regarding claim 4, 12, and 20, Larijani in view of Itoh teach all the imitations in claims 1, 6, 14, and further, Larijani teaches signal-to-noise ratio determining circuits coupled to said receivers respectively for determining signal-to-noise ratios of said demodulated signals and transmission power control bit generators coupled to said signal-to-noise ratio determining circuits respectively for generating transmission power control bit signals on the basis of said signal-to-noise ratios *(e.g., Fig. 1-3, 3:13-33, 4:44-46, 6:66-67, 7:1-17, 8:15-29, the control processor (52), Maximum Selector (64), Integrator (60), Statistical Power control (54) are connected, the power control generator is connected to the S/I determining to calculate the power control bit signal based on the S/I)*, wherein: said monitor unit, coupled to said transmission power control bit generators, monitors said transmission power control bit signals as said communication state *(e.g., Fig. 1-3, 4:44-53, 66-67, 5:1-20, 29-33, 6:54-67, 7:1-17, 8:22-44, the control processor (52), Maximum Selector (64), Integrator (60), and the connection made to the CDMA multi-path receiver(s), detecting and evaluating the radio communication quality (Communication monitor) with the mobile stations)*; and said adjusting unit judges that said communication state is worse than said predetermined state when the number of said transmission power control bit signals each of which require increase of transmission power is equal to or larger than a predetermined threshold *(e.g., 1:7-23, 35-46, 62-67, 2:53-57, 3:13-33, 4:44-46, 57-67, 6:66-67, 7:1-17, 8:15-29, 9:9-67, 11:29-44)*.

Regarding claim 5, 13, and 21, Larijani in view of Itoh teach all the imitations in claims 1, 6, 14, and further, Larijani teaches wherein: said monitor unit, coupled to said receivers, monitors total interference electric power of said demodulated signals *(e.g., Fig. 1-3, 4:44-53, 66-67, 5:1-20, 29-33, 6:54-67, 7:1-17, 8:22-44, the control processor (52), Maximum Selector (64), Integrator (60), and the connection made to the CDMA multi-path receiver(s), detecting and evaluating the radio communication quality (Communication monitor) with the mobile stations)* and the number of said mobile terminals communicating with said base station as said communication state *(e.g., Fig. 1-3, 4:44-53, 66-67, 5:1-20, 29-33, 6:54-67, 7:1-17, 8:22-44, the control processor (52), Maximum Selector (64), Integrator (60), and the connection made to the CDMA multi-path receiver(s), detecting and evaluating the radio communication quality (Communication monitor) with the mobile stations)*; and said adjusting unit judges that said communication state is worse than said predetermined state when a changing rate of a ratio of said total interference electric power to the number of said mobile terminals communicating with said base station is equal to or larger than a predetermined threshold *(e.g., 1:7-23, 35-46, 62-67, 2:53-57, 3:13-33, 4:44-46, 57-67, 6:66-67, 7:1-17, 8:15-29, 9:9-67, 11:29-44).*

Regarding claim 7 and 15, Larijani in view of Itoh teach all the imitations in claims 6, 14, and further, Larijani teaches wherein said transmission power control bit generators generate the transmission power control bit signals which requires increase of transmission power of said mobile stations when signal-to-noise ratios are equal to or

lower than a desired value *(e.g., Fig. 1-3, 9:9-67, 10:1-41)*; and said transmission power control bit adjusting circuit decreases said desired value to suppress an increase of transmission power of said mobile stations when said communication state monitor circuit detects said quality deterioration *(e.g., Fig. 1-3, 1:62-67, 2:53-57, 3:1-12, 4:44-53, 66-67, 5:1-20, 6:54-65, 7:7-9, 8:15-29, 58-65, Statistical Power Control (adjusting unit) connected to the Communication Monitor to detect, adjust, calculate power transmission between the base station and mobile, and to eliminate excess power transmission).*

Regarding claims 8 and 29, Larijani in view of Itoh teach all the imitations in claims 6, 27, and further, Larijani teaches wherein: said transmission power control bit adjusting circuit changes said transmission power control bit signals so that said transmission power control bit signals a require decrease of said transmission power of said mobile stations *(e.g., Fig. 1-3, 1:62-67, 2:53-57, 3:1-12, 4:44-53, 66-67, 5:1-20, 6:54-65, 7:7-9, 8:15-29, 58-65).*

Regarding claims 9 and 30, Larijani in view of Itoh teach all the imitations in claims 6, 27, and further, Larijani teaches wherein said communication state monitor circuit comprises: a monitor unit for monitoring said communication state of said radio communication *(e.g., Fig. 1-3, 4:44-53, 66-67, 5:1-20, 6:54-67, 7:1-17, 8:22-44, the control processor (52), Maximum Selector (64), Integrator (60), detecting and evaluating the radio communication quality (Communication monitor) with the mobile stations)*, a adjusting unit coupled to said monitor unit for judging whether said communication state

monitored by said monitor unit is worse than a predetermined state *(e.g., Fig. 1-3, 4:44-53, 66-67, 5:1-20, 6:54-65, 7:7-9, 8:15-29, 58-65, 9:9-67, 11:29-44, Statistical Power Control (adjusting unit) connected to the Communication Monitor to adjust and calculate the communication parameters (determining the state) considering the predetermine values of the communication state parameters)*, and a notifying unit coupled to said adjusting circuit for notifying said transmission power control bit adjusting circuit of said quality deterioration when said adjusting circuit judges that said communication state is worse than said predetermined state *(e.g., Fig. 1-3, 4:44-53, 66-67, 5:1-20, 6:54-67, 7:1-17, 8:22-44, 9:9-67, 11:29-44, the control processor (52), Maximum Selector (64), Integrator (60), Statistical Power control (54), the processor notifying Statistical Power Control (adjusting unit) of detraction of quality and being greater or less than the predetermine values that is deteriorated (worse) than the predetermined value).*

Regarding claim 10, Larijani in view of Itoh teach all the imitations in claim 6, and further, Larijani teaches wherein: said communication state monitor circuit coupled to said signal-to-noise ratio determining circuits monitors said signal-to-noise ratios as said communication state *(e.g., Figure 1, 3:13-33, 4:44-46, 6:66-67, 7:1-17, 8:15-29)*; and judges that said communication state is worse than said predetermined state when the number of signal-to-noise ratios each of which is smaller than a predetermined value, is equal to or larger than a predetermined threshold *(e.g., Fig. 1-3, 4:44-53, 66-67, 5:1-20, 6:54-67, 7:1-17, 8:22-44, 9:9-67, 11:29-44, the control processor (52), Maximum Selector (64), Integrator (60), Statistical Power control (54), the processor notifying*

Statistical Power Control (adjusting unit) of detraction of quality and being greater or less than the predetermine values that is deteriorated (worse) than the predetermined value)..

Regarding claims 23, 28, and 31, Larijani in view of Itoh teach all the imitations in claims 22, 27, and further, Larijani teaches wherein: total interference electric power of said demodulated signals is monitored as said communication state *(e.g., 1:62-67, 2:1-7, 3:60-65, 4:27-37, 9:43-46)*; and said communication state is judged to be worse than said predetermined state when said total interference electric power is equal to or larger than a predetermined threshold *(e.g., 1:7-23, 35-46, 62-67, 2:53-57, 3:13-33, 4:44-46, 57-67, 6:66-67, 7:1-17, 8:15-29, 9:9-67, 11:29-44).*

Regarding claims 24 and 32, Larijani in view of Itoh teach all the imitations in claims 22, 27, and further, Larijani teaches wherein: said monitoring periodically monitors an average of said signal-to-noise ratios as said communication state *(e.g., 3:26-53, 4:22-37, 8:11-21, 44-57)*; and said communication state is judged to be worse than said predetermined state when the number of signal-to-noise ratios, each of which is smaller than a predetermined value, is equal to larger than a predetermined threshold *(e.g., Fig. 1-3, 4:44-53, 66-67, 5:1-20, 6:54-67, 7:1-17, 8:22-44, 9:9-67, 11:29-44, the control processor (52), Maximum Selector (64), Integrator (60), Statistical Power control (54), the processor notifying Statistical Power Control (adjusting unit) of detraction of quality and being greater or less than the predetermine values that is deteriorated (worse) than*

the predetermined value).

Regarding claims 25 and 33, Larijani in view of Itoh teach all the imitations in claims 22, 27, and further, Larijani teaches determining signal-to-noise ratios of said demodulated signals *(e.g., Figure 1, 3:13-33, 4:44-46, 6:66-67, 7:1-17, 8:15-29)* and generating transmission power control bit signals on the basis of said signal-to-noise ratios, wherein: said transmission power control bit signals are monitored as said communication state *(e.g., Fig. 1-3, 3:13-33, 4:44-46, 6:66-67, 7:1-17, 8:15-29)*; and said communication state is judged to be worse than said predetermine state when the number of said transmission power control bit signals *(e.g., 1:7-23, 35-46, 62-67, 2:53-57, 3:13-33, 4:44-46, 57-67, 6:66-67, 7:1-17, 8:15-29, 9:9-67, 11:29-44)*, each of which require increase of transmission power, is equal to or larger than a predetermined threshold *(e.g., Fig. 1-3, 4:44-53, 66-67, 5:1-20, 6:54-67, 7:1-17, 8:22-44, 9:9-67, 11:29-44, the control processor (52), Maximum Selector (64), Integrator (60), Statistical Power control (54), the processor notifying Statistical Power Control (adjusting unit) of detraction of quality and being greater or less than the predetermine values that is deteriorated (worse) than the predetermined value).*

Regarding claims 26 and 34, Larijani in view of Itoh teach all the imitations in claims 22, 27, and further, Larijani teaches wherein: total interference electric power of said demodulated signals and the number of said mobile terminals communicating with said base station are monitored as said communication state*(e.g., 1:62-67, 2:1-7, 3:60-65,*

4:27-37, 9:43-46); and said communication state is judged to be worse than said predetermined state when a changing rate of a ratio of said total interference electric power to the number of said mobile terminals communicating with said base station is equal to or larger than a predetermined threshold *(e.g., Fig. 1-3, 4:44-53, 66-67, 5:1-20, 6:54-67, 7:1-17, 8:22-44, 9:9-67, 11:29-44).*

Regarding claim 36, Larijani in view of Itoh teach all the imitations in claim 35, and further, Larijani teaches wherein, said communication sate monitor monitors an interference power of the transmission signal received by said receiver *(e.g., Fig. 1-3, 1:62-67, 2:53-57, 3:1-12, 4:44-53, 66-67, 5:1-20, 6:54-65, 7:7-9, 8:15-29, 58-65)*, and detects the deterioration of the communication sate based on the interference power *(e.g., Figure 1, 3:13-33, 4:44-46, 6:66-67, 7:1-17, 8:15-29).*

Regarding claim 38, Larijani in view of Itoh teach all the imitations in claim 37, and further, Larijani teaches wherein, the deterioration of the communication sate is detected based on an interference power of transmission signals *(e.g., Fig. 1-3, 1:62-67, 2:53-57, 3:1-12, 4:44-53, 66-67, 5:1-20, 6:54-65, 7:7-9, 8:15-29, 58-65)*, from the plural mobile stations, received by the base station *(e.g., Figure 1, 3:13-33, 4:44-46, 6:66-67, 7:1-17, 8:15-29).*

(10) Response to Argument

Claims 1-42 rejections under Claim Rejections - 35 USC 103(a):

Applicant's arguments with respect to the rejected claims 1-42 under Claim Rejections-35 U.S.C. 103(a) have been fully considered, but they are not persuasive.

Applicant argues *(see Brief p. 22-26)* that Larijani in view of Itoh do not teach the followings:

Regarding claim 1, communication state monitor for "***detecting quality deterioration of radio communication with mobile stations***" *(Brief p. 22)*. Examiner disagrees, Larijani clearly shows that in a CDMA system transmission power control *(like applicant's invention in a CDMA system transmission power control)* with base station transmission to multiple mobile units (stations), the CDMA multi-path receiver (12) *(applicant's Receiver (11))* demodulates the received signals that are transmitted from the mobile units, and the Statistical Power Control (54) in combination with Integrator (60) Maximum Selector (64) and Control Processor (52) together perform the Applicant's "communication state monitor" by measuring the Signal-to-Interference ratio (S/I) that is known in the art as signal-to-noise ratio of the received signals detects the radio communication transmission quality between the base station and mobile units, this is clearly monitoring the communication state between the base station and mobile units, based on the received signals S/I ratio calculates the transmission power control bits (53) *(applicant's power control bits (42))* that is transmitted to Mux (50) *(applicant's Mux (15))* and power control signals are transmitted via transmitter (84) *(applicant's Transmitter (16))* in CDMA system to mobile units (terminals) *(e.g., Fig. 1, 1:7-11, 5:4-*

10, 6:54-67, 7:1-13, 8:3-10, 22-30). Larijani does not specifically teach the term deterioration, for clarity, the second reference is being introduced, and that is why, the claims are being rejected under 103(a) Rejections. In a related art dealing with power control CDMA system mobile communication quality detection, Itoh teaches the detection of quality degradation (deterioration) of the radio communication *(see "(9) Grounds of Rejection" of this document).*

Regarding claim 6, communication state monitor coupled to the **receiver** for "***detecting quality deterioration of a communication state of radio communication between said base station and said mobile stations***" *(Brief p. 22).* Examiner disagrees, Larijani clearly shows the receiver (12) *(applicant's Receiver (11))* is connected to communication state monitoring circuits as described above *(Regarding claim 1)* that the Statistical Power Control (54) in combination with Integrator (60) Maximum Selector (64) and Control Processor (52) together perform the Applicant's "communication state monitor" by measuring the Signal-to-Interference ratio (S/I) that is well known in the art as signal-to-noise ratio of the received signals detects the radio communication transmission quality between the base station and mobile units, this is clearly monitoring the communication state between the base station and mobile units, based on the received signals S/I ratio calculates the transmission power control bits (53) *(applicant's power control bits (42))* that is transmitted to Mux (50) *(applicant's Mux (15))* and power control signals are transmitted via transmitter (84) *(applicant's Transmitter (16))* in CDMA system to mobile units (terminals) *(e.g., Fig. 1, 1:7-11, 5:4-10, 6:54-67, 7:1-13,*

8:3-10, 22-30). Larijani does not specifically teach the term deterioration, for clarity, the second reference is being introduced, and that is why, the claims are being rejected under 103(a) Rejections. In a related art dealing with power control CDMA system mobile communication quality detection, Itoh teaches the detection of quality degradation (deterioration) of the radio communication *(see "(9) Grounds of Rejection" of this document).*

Regarding claim 14, communication state monitor coupled to the **receiver** for "***detecting quality deterioration of a communication state of radio communication between said base station and said mobile stations***" *(Brief p. 22).* Examiner disagrees, Larijani Examiner disagrees, Larijani clearly shows that the receiver (12) *(applicant's Receiver (11))* connected to the communication monitoring circuits. the Statistical Power Control (54) in combination with Integrator (60) Maximum Selector (64) and Control Processor (52) together perform the Applicant's "communication state monitor" by measuring the Signal-to-Interference ratio (S/I) that is well known in the art as signal-to-noise ratio of the received signals detects the radio communication transmission quality between the base station and mobile units, this is clearly monitoring the communication state between the base station and mobile units, based on the received signals S/I ratio calculates the transmission power control bits (53) *(applicant's power control bits (42))* that is transmitted to Mux (50) *(applicant's Mux (15))* and power control signals are transmitted via transmitter (84) *(applicant's Transmitter (16))* in CDMA system to mobile units (terminals) *(e.g., Fig. 1, 1:7-11, 5:4-10, 6:54-67, 7:1-13, 8:3-10, 22-30).*

Larijani does not specifically teach the term deterioration, for clarity, the second reference is being introduced, and that is why, the claims are being rejected under 103(a) Rejections. In a related art dealing with power control CDMA system mobile communication quality detection, Itoh teaches the detection of quality degradation (deterioration) of the radio communication *(see "(9) Grounds of Rejection" of this document)*

Regarding claim 22, at the **base station** monitoring "***a communication state of radio communication between said base station and said mobile stations***" *(Brief p. 22)*. Examiner disagrees, Larijani clearly shows the in a CDMA system transmission power control *(like applicant's invention in a CDMA system transmission power control)* with base station transmission to multiple mobile units (stations) that the base station monitoring the communication state between the base station and the mobile units, the Statistical Power Control (54) in combination with Integrator (60) Maximum Selector (64) and Control Processor (52) together perform the Applicant's "communication state monitor" by measuring the Signal-to-Interference ratio (S/I) that is well known in the art as signal-to-noise ratio of the received signals detects the radio communication transmission quality between the base station and mobile units, this is clearly monitoring the communication state between the base station and mobile units, based on the received signals S/I ratio calculates the transmission power control bits (53) *(applicant's power control bits (42))* that is transmitted to Mux (50) *(applicant's Mux (15))* and power control signals are transmitted via transmitter (84) *(applicant's Transmitter (16))* in

CDMA system to mobile units (terminals) *(e.g., Fig. 1, 1:7-11, 5:4-10, 6:54-67, 7:1-13, 8:3-10, 22-30).* Larijani does not specifically teach the term deterioration, for clarity, the second reference is being introduced, and that is why, the claims are being rejected under 103(a) Rejections. In a related art dealing with power control CDMA system mobile communication quality detection, Itoh teaches the detection of quality degradation (deterioration) of the radio communication *(see "(9) Grounds of Rejection" of this document).*

Regarding claim 27, the **base station** detecting "***quality deterioration of a communication state of radio communication between said base station and said mobile stations***" *(Brief p. 22)*. Examiner disagrees, Larijani clearly shows that in a CDMA system transmission power control *(like applicant's invention in a CDMA system transmission power control)* with base station detecting the communication quality, the Statistical Power Control (54) in combination with Integrator (60) Maximum Selector (64) and Control Processor (52) together perform the Applicant's "communication state monitor" by measuring the Signal-to-Interference ratio (S/I) that is well known in the art as signal-to-noise ratio of the received signals detects the radio communication transmission quality between the base station and mobile units, this is clearly detecting communication quality between the base station and mobile units, based on the received signals S/I ratio calculates the transmission power control bits (53) *(applicant's power control bits (42))* that is transmitted to Mux (50) *(applicant's Mux (15))* and power control signals are transmitted via transmitter (84) *(applicant's Transmitter (16))* in

CDMA system to mobile units (terminals) *(e.g., Fig. 1, 1:7-11, 5:4-10, 6:54-67, 7:1-13, 8:3-10, 22-30).* Larijani does not specifically teach the term deterioration, for clarity, the second reference is being introduced, and that is why, the claims are being rejected under 103(a) Rejections. In a related art dealing with power control CDMA system mobile communication quality detection, Itoh teaches the detection of quality degradation (deterioration) of the radio communication *(see "(9) Grounds of Rejection" of this document).*

Regarding claim 35, a receiver demodulates transmitted signals from "***plural mobile stations***", and the communication state monitor that is coupled to the receiver "***detects a deterioration of a communication state of radio communication between said base station and the plural mobile stations***" *(Brief p. 23).* Examiner disagrees, Larijani clearly shows that in a CDMA system transmission power control *(like applicant's invention in a CDMA system transmission power control)* with base station transmission to multiple mobile units (stations), the CDMA multi-path receiver (12) *(applicant's Receiver (11))* demodulates the received signals that are transmitted from the mobile units that is connected to the base station communication monitoring circuits, the Statistical Power Control (54) in combination with Integrator (60) Maximum Selector (64) and Control Processor (52) together perform the Applicant's "communication state monitor" by measuring the Signal-to-Interference ratio (S/I) that is well known in the art as signal-to-noise ratio of the received signals detects the radio communication transmission quality between the base station and mobile units, this is clearly monitoring

the communication state between the base station and mobile units, based on the received signals S/I ratio calculates the transmission power control bits (53) *(applicant's power control bits (42))* that is transmitted to Mux (50) *(applicant's Mux (15))* and power control signals are transmitted via transmitter (84) *(applicant's Transmitter (16))* in CDMA system to mobile units (terminals) *(e.g., Fig. 1, 1:7-11, 5:4-10, 6:54-67, 7:1-13, 8:3-10, 22-30).* Larijani does not specifically teach the term deterioration, for clarity, the second reference is being introduced, and that is why, the claims are being rejected under 103(a) Rejections. In a related art dealing with power control CDMA system mobile communication quality detection, Itoh teaches the detection of quality degradation (deterioration) of the radio communication *(see "(9) Grounds of Rejection" of this document).*

Regarding claim 37, a receiver which receives from the base station the transmission power control signal that is for decreasing power of the signal to be transmitted to the base station in the case where "***a deterioration of a communication state of radio communication between said base station and the plural mobile stations is detected at the base station***" *(Brief p. 23).* Examiner disagrees, Larijani clearly shows that in a CDMA system transmission power control *(like applicant's invention in a CDMA system transmission power control)* with base station transmission to multiple mobile units (stations) and the multiple mobile unit receiving transmission power control signals from the base station that is to adjust (lower) power of the signal to be transmitted to the base station *(e.g., Fig. 1-3, 1:7-11, 10:1-12)*, the base station detecting the communication

quality that is the Statistical Power Control (54) in combination with Integrator (60) Maximum Selector (64) and Control Processor (52) together perform the Applicant's "communication state monitor" by measuring the Signal-to-Interference ratio (S/I) that is well known in the art as signal-to-noise ratio of the received signals detects the radio communication transmission quality between the base station and mobile units, this is clearly detecting communication quality between the base station and mobile units, based on the received signals S/I ratio calculates the transmission power control bits (53) *(applicant's power control bits (42))* that is transmitted to Mux (50) *(applicant's Mux (15))* and power control signals are transmitted via transmitter (84) *(applicant's Transmitter (16))* in CDMA system to mobile units (terminals) *(e.g., Fig. 1, 1:7-11, 5:4-10, 6:54-67, 7:1-13, 8:3-10, 22-30).* Larijani does not specifically teach the term deterioration, for clarity, the second reference is being introduced, and that is why, the claims are being rejected under 103(a) Rejections. In a related art dealing with power control CDMA system mobile communication quality detection, Itoh teaches the detection of quality degradation (deterioration) of the radio communication *(see "(9) Grounds of Rejection" of this document).*

Regarding claim 39, a receiver coupled to the communication state monitor that "***detects a deterioration of a communication state of radio communication between said base station and the plural mobile stations***" *(Brief p. 23).* Examiner disagrees, Larijani clearly shows that in a CDMA system transmission power control *(like applicant's invention in a CDMA system transmission power control)* with base station transmission

to multiple mobile units (stations), the CDMA multi-path receiver (12) *(applicant's Receiver (11))* demodulates the received signals that are transmitted from the mobile units that is connected to the base station communication monitoring circuits, the Statistical Power Control (54) in combination with Integrator (60) Maximum Selector (64) and Control Processor (52) together perform the Applicant's "communication state monitor" by measuring the Signal-to-Interference ratio (S/I) that is well known in the art as signal-to-noise ratio of the received signals detects the radio communication transmission quality between the base station and mobile units, this is clearly monitoring the communication state between the base station and mobile units, based on the received signals S/I ratio calculates the transmission power control bits (53) *(applicant's power control bits (42))* that is transmitted to Mux (50) *(applicant's Mux (15))* and power control signals are transmitted via transmitter (84) *(applicant's Transmitter (16))* in CDMA system to mobile units (terminals) *(e.g., Fig. 1, 1:7-11, 5:4-10, 6:54-67, 7:1-13, 8:3-10, 22-30).* Larijani does not specifically teach the term deterioration, for clarity, the second reference is being introduced, and that is why, the claims are being rejected under 103(a) Rejections. In a related art dealing with power control CDMA system mobile communication quality detection, Itoh teaches the detection of quality degradation (deterioration) of the radio communication *(see "(9) Grounds of Rejection" of this document).*

Regarding claim 40, the **base station** detecting "***a deterioration of a communication state of radio communication between said base station and the plural mobile stations***"

(Brief p. 23). Examiner disagrees, Larijani clearly shows that in a CDMA system transmission power control *(like applicant's invention in a CDMA system transmission power control)* with base station detecting the communication quality, the Statistical Power Control (54) in combination with Integrator (60) Maximum Selector (64) and Control Processor (52) together perform the Applicant's "communication state monitor" by measuring the Signal-to-Interference ratio (S/I) that is well known in the art as signal-to-noise ratio of the received signals detects the radio communication transmission quality between the base station and mobile units, this is clearly detecting communication quality between the base station and mobile units, based on the received signals S/I ratio calculates the transmission power control bits (53) *(applicant's power control bits (42))* that is transmitted to Mux (50) *(applicant's Mux (15))* and power control signals are transmitted via transmitter (84) *(applicant's Transmitter (16))* in CDMA system to mobile units (terminals) *(e.g., Fig. 1, 1:7-11, 5:4-10, 6:54-67, 7:1-13, 8:3-10, 22-30)*. Larijani does not specifically teach the term deterioration, for clarity, the second reference is being introduced, and that is why, the claims are being rejected under 103(a) Rejections. In a related art dealing with power control CDMA system mobile communication quality detection, Itoh teaches the detection of quality degradation (deterioration) of the radio communication *(see "(9) Grounds of Rejection" of this document)*.

Regarding claim 41, receiving from the base station the transmission power control signal that is for decreasing power of the signal to be transmitted to the base station in the

case where "***a deterioration of a communication state of radio communication between said base station and the plural mobile stations is detected at the base station***" *(Brief p. 23)*. Examiner disagrees, Larijani clearly shows that in a CDMA system transmission power control *(like applicant's invention in a CDMA system transmission power control)* with base station transmission to multiple mobile units (stations) and the multiple mobile unit receiving transmission power control signals from the base station that is to adjust (lower) power of the signal to be transmitted to the base station *(e.g., Fig. 1-3, 1:7-11, 10:1-12)*, the base station detecting the communication quality that is the Statistical Power Control (54) in combination with Integrator (60) Maximum Selector (64) and Control Processor (52) together perform the Applicant's "communication state monitor" by measuring the Signal-to-Interference ratio (S/I) that is well known in the art as signal-to-noise ratio of the received signals detects the radio communication transmission quality between the base station and mobile units, this is clearly detecting communication quality between the base station and mobile units, based on the received signals S/I ratio calculates the transmission power control bits (53) *(applicant's power control bits (42))* that is transmitted to Mux (50) *(applicant's Mux (15))* and power control signals are transmitted via transmitter (84) *(applicant's Transmitter (16))* in CDMA system to mobile units (terminals) *(e.g., Fig. 1, 1:7-11, 5:4-10, 6:54-67, 7:1-13, 8:3-10, 22-30)*. Larijani does not specifically teach the term deterioration, for clarity, the second reference is being introduced, and that is why, the claims are being rejected under 103(a) Rejections. In a related art dealing with power control CDMA system mobile communication quality detection, Itoh teaches the detection of quality degradation

(deterioration) of the radio communication *(see "(9) Grounds of Rejection" of this document).*

Regarding claim 42, at the **base station** detecting ***"a deterioration of a communication state of radio communication between said base station and the plural mobile stations***" *(Brief p. 24).* Examiner disagrees, Larijani clearly shows that in a CDMA system transmission power control *(like applicant's invention in a CDMA system transmission power control)* with base station detecting the communication quality, the Statistical Power Control (54) in combination with Integrator (60) Maximum Selector (64) and Control Processor (52) together perform the Applicant's "communication state monitor" by measuring the Signal-to-Interference ratio (S/I) that is well known in the art as signal-to-noise ratio of the received signals detects the radio communication transmission quality between the base station and mobile units, this is clearly detecting communication quality between the base station and mobile units, based on the received signals S/I ratio calculates the transmission power control bits (53) *(applicant's power control bits (42))* that is transmitted to Mux (50) *(applicant's Mux (15))* and power control signals are transmitted via transmitter (84) *(applicant's Transmitter (16))* in CDMA system to mobile units (terminals) *(e.g., Fig. 1, 1:7-11, 5:4-10, 6:54-67, 7:1-13, 8:3-10, 22-30).* Larijani does not specifically teach the term deterioration, for clarity, the second reference is being introduced, and that is why, the claims are being rejected under 103(a) Rejections. In a related art dealing with power control CDMA system mobile communication quality detection, Itoh teaches the detection of quality degradation

(deterioration) of the radio communication *(see "(9) Grounds of Rejection" of this document).*

The main point of the Appellants' arguments seems to rest in the remarks in the arguments *(Brief p. 24)* that "<u>plurality of individual communications between a plurality of mobiles stations</u>" is not recited in the claims. But, there are no plurality of individual communications specifically claimed. The claims, as now worded, could reasonably be interpreted as monitoring a broadcast from the base station to the multiple mobile stations.

Regarding dependent claims 2, 5, 10, 13, 18, 21, 23, 26, 31, and 34 *(Brief p. 25 (2))*, applicant argues that Larijani in view of Itoh do not teach "total interference electric power" of multiple mobile stations being monitored. Examiner disagrees, Larijani clearly teaches all the limitations of independent claims 1, 6, 14, 22, 27, and further clearly shows that the CDMA multi-path receiver (12) *(applicant's Receiver (11))* demodulates the received signals that are transmitted from the mobile units, and the Statistical Power Control (54) in combination with Integrator (60) Maximum Selector (64) and Control Processor (52) together perform the Applicant's "communication state monitor" by measuring the Signal-to-Interference ratio (S/I) that is well known in the art as signal-to-noise ratio of the received signals detects the radio communication transmission quality between the base station and mobile units, this is clearly monitoring the communication state between the base station and mobile units, based on the over all

received signals S/I ratio being calculated, and further, it is well known in the art that "power" is "energy" and "signals" are "electrical", interference is caused by the electrical noise, therefore, the sum interference electrical energy or power of multiple mobile units are being monitored in the CDMA system *(e.g., Fig. 1, 1:7-11, 5:4-10, 6:54-67, 7:1-13, 8:3-10, 22-30).* Larijani does not specifically teach the term deterioration, for clarity, the second reference is being introduced, and that is why, the claims are being rejected under 103(a) Rejections. In a related art dealing with power control CDMA system mobile communication quality detection, Itoh teaches the detection of quality degradation (deterioration) of the radio communication *(see "(9) Grounds of Rejection" of this document).*

Regarding dependent claims 3, 11, 19, 24, and 32, the arguments *(Brief p. 25 (3))* "...plurality of communications between plurality of mobiles stations..." is not recited in the claims.

Regarding dependent claims 4, 12, 20, 25, and 33, the remarks in the arguments *(Brief p. 26 (5))* "measuring...signal of a plurality of communications between plurality of mobiles stations" is not recited in the claims.

Therefore, Larijani in view of Itoh obviate applicant's invention *(for more information see **(9) Grounds of Rejection** in this document).*

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/SHAIMA Q. AMINZAY/

Examiner, Art Unit 2618

Conferees:

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